

HAMADRYAD



Editor's Note

During the course of a survey or study there are invariably details of interest that are not compatible with tables and charts, graphs and scientific terminology. A wild scramble in the mud after a crocodile results in an erudite paper on captive growth, and a cobra who scared the pants off you becomes The Incidence of Parasites in South-east Indian Elapids. This is of-course most unfair, so we asked Satish Bhaskar to put together some homely dope on his 8 month Andaman-Nicobar trip last year. This the poor man has done. Satish is the author of "The Status of Sea Turtles in the Eastern Indian Ocean", presented at the International Sea Turtle Symposium in Washington D.C. in November '79.

We spent five weeks in the States last year, visiting various crocodilian "facilities", as the Americans call them. Our three days at Rockefeller Refuge with Ted Joanen were fascinating. We flew over the Refuge for 3½ hours in a helicopter with Ted, doing a fair bit of hovering and circling. Fortunately our great respect for him prevented us from being sick. In the Everglades with Jim Kushlan's team we watched an alligator being radio tracked and a pair of surprised eyes pop up beside the airboat. It was the first time we had seen telemetry in action and felt like country cousins come to town.

There was a large gathering of crocodile biologists at the meetings in Milwaukee (SSAR) and Gainesville (IUCN Crocodile Group). Our last stop was in South Carolina with Heyward Clump, a professional snake hunter and an encyclopedia on south-eastern snakes. One of Heyward's methods of catching diamondbacks is to scatter tin sheeting around the countryside. These are solemnly turned over every few weeks, the ritual being called "checking the tin". We drove with him to Georgia (his snake hooks carefully fitted into the pickup truck's rifle rack) and met the locally famous Okefenokee Joe, an ex country-singer who now works for the Okefenokee Park and is also an avid snake collector. There was an earnest snake hunt the next day which I passed up; but did manage to disgrace myself by sitting a few feet away from a pigmy rattlesnake with Joe's wife, and failing to see or catch it.

Satish Bhaskar is now involved in a comprehensive survey of sea turtle nesting areas in India and is currently in the Andaman Islands (again)

The business of snake 'yagnas' in South India seems to be getting out of hand. Yagna, literally, means pilgrimage. In this context it means that you sit yourself in an enclosure full of snakes, become a tourist attraction and make easy money through entrance fees. Since 'yagnas' come within the fragile definition of a religious activity, the profits are tax-free and the government has not been able to stop them under the Wildlife Act; even though one needs a permit to keep even a watersnake as a pet! There are nine of these snake shows currently in Kerala alone. One aspirant died of a cobra bite last month.

Z.W.

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TRAVELS IN THE ANDAMAN AND NICOBAR ISLANDS -1979

Crocodiles

I do not know how far out to sea estuarine crocodiles (Crocodylus porosus) range from their native shores; I have read somewhere that 25 miles has been recorded for an adult. So when my friend Manjit and I were informed by the hospitable headman of the sleepy Car Nicobari village that no crocodiles survive on the island — the last, he said, had been killed near his village about six years earlier — we offered to show him the tracks we had seen emerging from the sea, near a small creek.

After a ten minute walk through coconut plantations we, together with a small group of interested Nicobarese were on the white, powdery, coral-sand beach, looking at tracks made by a young crocodile. The animal appeared to be of a size smaller than the juveniles I had frequently encountered inhabiting tidal pools in the Nicobars — on Katchal, Nancowry and Great Nicobar islands -- and fractionally larger than the 70 cm., 750 gm crocodile that disturbed my plastic groundsheet as I slept on the bench at Trinkat island.

The tracks led over the sand of the narrow beach and disappeared into swampy ground on the landward side. I could not help feeling that despite the tiny size of the pioneer — or stowaway, for it seemed possible that it had arrived on drifting vegetation — the swamp was too small to conceal its presence from humans for long. Involuntary or not, the sea voyage it undertook must have been perilous indeed: the nearest crocodile habitats were Teressa island, roughly 65 miles away, Tillanchong and Camorta islands, 80 miles and Little Andaman, 100 miles. Incidentally, Tillanchong is the island made famous by Dr. Hans Hass during his 1957 expedition — he called it the most beautiful island he had laid eyes on. Nicobarese from the islands of Camorta and

Trinkat, who seasonally harvest coconuts from the uninhabited island state that wildlife -- (pigs, crocodiles, snakes etc.) still abounds on the island today.

Sea snakes

Dr. Manjit Singh is an unusual person. During his tenure as surgeon at the Government Hospital at Car Nicobar island he had established a degree of rapport with the Nicobarese matched by few mainland Indians. He speaks their language, participates in their light-hearted banter and has developed a strong liking for toddy that endeared him to the Nicobarese, who are no teetotalers. And judging by the speeches and tearful farewells at the party the hospital staff threw in his honour, he was as accomplished at his vocation as in his interpersonal dealings. A keen mountaineer and explorer, it was his restlessness that had urged him to resign his post and seek a new life abroad.

When I informed Manjit that I would be out looking for seasnakes along Car Nicobars' shores, he joined me eagerly. I had seen numerous seasnake tracks while walking the island beaches looking for signs of nesting seaturtles, and I thought that there was a reasonable chance of observing them as they emerged from the sea.

A few minutes before dusk, Manjit and I had settled down to wait among Pandanus bushes near some low-lying rocks that bordered the beach. Darkness fell. We played our torch on the rocks for barely a minute when there appeared a two-foot Laticauda crawling over the rocks. The adjacent fringing reef supports a variety of marine life including moray eels, one of which we had observed as it poked its head out from a crevice in the intertidal zone. I read later that eels are often preyed on by seasnakes.

Our Laticauda had disappeared, but there now appeared very close to it another individual apparently of the same species but smaller in size. I saw Manjit hastily scouring the rocks in his vicinity! With considerable effort, the beautiful blue-and-black banded seasnake crawled beyond the reach of the tide, giving me an opportunity to indulge in a little experiment.

A few months earlier, on Havelock island, I had been brushing my teeth with paste and seawater -- to conserve drinking water -- on a moonless night on a rocky outcrop that bordered the island shore. Midway through my ablutions my flashlight beam revealed the presence of a Laticauda -- a large one, about four feet from me. To my dismay, chance or the

attraction of the flashlight beam appeared to draw the snake directly towards me. I am no snake man, and I did not know whether or not *Laticauda* are aggressive, but there was little doubt as to what I wished most to do — remove myself speedily from the scene, which I would have done had the slippery rocks permitted! I switched off the flashlight, hastily switched it on again and scrambled over the rocks to safety. Is *Laticauda* attracted to light?...

With Manjit by my side, I played the flashlight on the second snake, about 10 feet away. Quite at ease, it crawled up the beach until it lay between my feet. I wished to see whether it could be persuaded to climb my trouser leg, using the torch beam as a lure, but a slight movement by Manjit disturbed it. It slithered away quickly to the waterline where we soon lost it.

Reminders of World War II are to be found on many islands in the Andamans and Nicobars — dank concrete pillboxes, mounted guns 28 feet in length and falling apart as rust overtakes them, parts of discarded vehicles — most, if not all, Japanese. The tropical forest blankets all, and the gun emplacements are often mere blocks of misshapen concrete where the sea has pounded them into ruin. I remember one such emplacement in Car Nicobar — it is still intact and though overgrown by vegetation, still commands a view of a very beautiful beach. Near the centre of the beach is a 30 foot high cliff that has been riddled by what seem to be bullets from a machine gun. Manjit and I spent an hour digging out and collecting fragments of spent bullets — many corroded green — from the cliff face.

Onges

The island of Little Andaman is inhabited by a negrito tribe, the Onge. Today the Onge number only 110 and Little Andaman has itself been opened for settlement by refugees, Indians from the mainland and by Nicobarese. Most of the Onges have moved into colonies provided by the Administration, but it is still possible to see disused huts built by the Onges at some points along the coast. That hunting and fishing as a way of life with the Onge has not disappeared became evident to me when I found Onges on two occasions engaged in traditional activity near the shore — one young man was painstakingly but dexterously hollowing out a tree trunk to be made into a boat, using a small adz, while another was fashioning a tree stem into a spear to be used for harpooning fish and turtles. The basic simplicity and innocence of the Onge has been commented on before, as also their devotion to each other. Both men I met were accompanied by their wives, and a baby in one instance.

As I slept in a jungle clearing in my mosquito net, it was strangely soothing to listen to the songs they chanted in unison. Perhaps in order to discourage mosquitoes and sand-flies, the Onges slept on a narrow platform made of sticks, under which the smoky embers of a fire were kept alight. At half-hour intervals throughout the night, one or other of the Onge would rise and stoke the embers or replace a faggot.

Ranchis

A considerable proportion of the work force that has made the recent colonization of the Andaman and Nicobars possible originates from east-central India. Known locally as "Ranchis", they are a hardy and cheerful people. Many are conversant with life in the forest and are keen hunters. A 'Ranchi' named Louis with whom I once travelled was bitten by a venomous snake. It was past sunset and we had many miles to walk that night, with no medical aid immediately available. Despite a headache and a growing swelling on his bitten leg, Louis stoically walked four hours through a mangrove swamp, chopping down a tree to use as a makeshift bridge across a creek on one occasion and reaching an outpost dispensary where he all but recovered the following day. It was the third occasion on which Louis had been bitten by a venomous snake — this time perhaps by a not-so-venomous Andaman pit viper (Trimeresurus purpureomaculatus) — and he was visibly proud to be on his feet the next day and able to carry on his back a heavy load of supplies required at another forest settlement.

Snakes

The Andaman and Nicobars have their share of lethally venomous terrestrial snakes — the king cobra (Ophiophagus hannah) is known from Middle Andaman and I have seen a krait (Bungarus andamanense) in the heart of town in Port Blair. There are several species of pit vipers. I saw at least four species in varied habitats — among the leaves of a mangrove tree in a swamp on North Passage Island, a green vine snake on the bole of a large tree at Karmatang, Middle Andaman, a fast-moving snake among coconut frond debris on the ground at Trinket island and a dog-faced water snake in two inches of seawater near the shore of the same island. There was also a small snake with an iridescent blue and green sheen that inexplicably lay coiled up, dead and stiff, on the coralsand beach of a tiny island called Chester — one of the Labyrinth islands. Its jaws were wide open in death but external injuries were absent.

On the island of Great Nicobar, I heard reports of settlers occasionally losing their domestic fowl to a very large kind of snake — apparently the Royal Python (Python reticulatus) which is among the largest snakes in the world, rivalling the anaconda in length.

Hunting

As is the case at any place where far-flung colonies have been established, policing the activities of settlers often presents difficulties. The Andamans are no exceptions. Poaching is rife on the remote coast of Betapur in Middle Andaman. A man named Rosappa informed me, with a touch of pride, that very few seaturtles ^{duying} then nested along a section of beach near his camp because ^{duying} his ten-year stay there he had removed every clutch of seaturtle eggs — probably near 100% — that he could locate.

I spent a week with two poachers who had been settled in the Andamans after having arrived as refugees from East Bengal (now Bangladesh). They worked with trained hunting dogs to catch wild pig and axis deer (Axis axis) (the latter species had proliferated after having been introduced into the Andamans). They also set traps, a series of about a hundred of which I had an opportunity to visit one morning. I inadvertently spring two cleverly-concealed traps, fortunately without injury to myself. Some of the hunting dogs that had scars on their legs had been less fortunate.

An axis deer (Axis axis) that had been trapped by a leg was trussed up and carried on a pole while the remaining traps were checked or reset. Twice the poachers lost their footing and dropped the animal. Its eyes wide with fright, it moaned piteously each time it hit the ground. A while later we came upon a trapped barking deer, but it was dead and the carcass beginning to rot — failure to check the traps regularly has resulted in this waste. Then there was a three-foot monitor lizard (Varanus salvator) that had been snared by a leg. Before I was aware of their intentions, the hunters had freed their trap by hacking off the reptiles trapped leg. At my remonstrance at this display of callousness, I was told that the animal was capable of inflicting a nasty bite if handled in any other way. Monitor lizard meat is relished in some places in the Andamans.

The hunters also used throw-nets to catch freshwater prawns in the clear mountain streams that ran by their encampment into the sea. The prawns were baited with balls of dough. Eggs of seaturtles were assiduously dug up after they had been located by the use of a probe-stick. Turtle-egg omelettes were prepared out of the yolk alone, the albumen being wastefully discarded. But most of the eggs and the meat and hide of the animals they trapped — as also the

large cowries (Cypraea mauritanica) that they collected from the reef at low tide — were sold at Nimbutala and Betapur.

Turtles

It is curious that during almost 200 years of occupation by Europeans and Indians the existence of turtles — other than seaturtles — in the Andamans and Nicobars should have gone unrecorded. By a coincidence, two species were found in a single year, 1979, by the Wildlife Wing of the Forest Department. Both have been hitherto unreported from Indian soil. One, which awaits identification — it is a softshell turtle, in all likelihood an exotic subspecies of the otherwise common Lissemys punctata — was reported to have been found in the sea in shallow water near a mangrove swamp at Port Blair. The other, probably Cuora amboinensis the Amboine turtle, is a box turtle that was found at Campbell Bay, Great Nicobar island. A living specimen of this species was also shown to me at Trinkat island as also two eggs that it had laid in January. They were white and elliptical. One measured 25mm x 50mm. The species is also said to occur on Camorta island and on Car Nicobar.

Nicobarese

I found the diet of the Central Nicobarese to be worthy of comment. It was not unusual for a Nicobarese to offer, as a friendly token, a piece of dried fish to a visitor. That it was totally uncooked only appeared to heighten the esteem in which the flavour was held! On one occasion, I saw Nicobarese children and adults clustered about a honey-comb they had found in a forest on Nancowry island. The grubs it contained were being delicately extracted singly and eaten with relish. The meat of seaturtles — including that of the Hawksbill — is sometimes finely minced and eaten raw with coconut. I believe this practice, however, to be not entirely safe as Hawksbills have been known to sometimes accumulate lethal poisons in their system through the consumption of marine organisms containing these poisons. Tridacna clams (giant clams) are sometimes carefully nurtured or farmed in shallow water near Nancowry until they grow to a large size, when the meat is eaten.

Sea life

The undersea life in the Andamans and Nicobars is as rich and varied as any in a tropical coral reef area. The collection of molluscs such as cowries, helmet shells, trochus, turbo, chank and murex shells is

becoming increasingly big business. Shell ornaments are popular, especially among people of Bengali origin.

Near the jetty at Katchal island where I utilized the stopover period of a inter-island ferryboat to take a quick plunge in the sea, I excitedly beheld the first colony of garden eels (troglodyte eels) that I had seen, on a sloping sandy bed in about 15 ft of water. As I approached them, they simultaneously retreated tail-first into their sandy burrows, swaying like stalks of vegetation in the gentle swell. Dr. Hans Hass has recorded the presence of troglodyte eels from deeper water off Great Nicobar island, but whether or not these were of the same species as the ones I saw, I am unable to confirm.

Close to the town of Wandoor in South Andaman, the intertidal fauna is particularly rich. Large chitons cling to spray-moistened rocks; sea cucumbers of at least five species are found in the shallows. A small pale white octopus crawled over rocks exposed by the tide.

South of the hamlet of Pulo Babi on Great Nicobar island, I twice observed avian predators — perhaps Nicobar Serpent Eagles — snatch up octopi from a reef exposed at low tide. In one instance the bird was forced to drop its prey after partaking of a bite or two, because of the mollusc's weight. Despite having a chunk missing from its mantle, I found the octopus to be alive and active after its fall.

I was fortunate enough to see civet cats (Paradoxurus tytleri) on two occasions: Once at day break on uninhabited Tarmugli island at a distance of ten feet as it leisurely climbed to the top of a tall tree, and another individual at dusk as it searched for titbits among crevices in the exposed reef on Rutland Island, much as I had observed wild pig do in Little Andaman. On both occasions the civets displayed a degree of apparent unconcern about the proximity of a human being that was startling to me.

It is to be hoped that the rapidly expanding population in the Andamans and Nicobars and the influx of refugees and settlers, with the resultant need for living space and resources like timber, will not result in the undermining of its irreplaceable forest wealth or cause the disappearance of the the surviving negrito tribes and of their culture. Satish Bhaskar.

TURTLE MEAT KILLS THREE

Tuticorin, June 17, 1980 (UNI)

Turtle meat took three lives — one directly and two indirectly — today. Two suckling infants aged six months and one year died after their mothers had taken turtle meat, and a seven-year old girl who took the meat also died today, official sources said.

Seventy nine people (all fisherfolk) including several women of the fisherman colony of Trespuram who had taken turtle meat on Sunday (June 15, 1980) were treated at the Government headquarters hospital here. 57 were treated as out-patients and 22 were still in hospital.

From the 'Indian Express' Wednesday, June 18, 1980.

It appears likely that the turtle in question was a Hawksbill sea turtle (Eretmochelys imbricata), a species which has been indicated recurrently as causing deaths in India and Sri Lanka. The following instances have been recorded:

On 6th and 7th August 1977, nine persons — two adults and seven children of varying ages — died in the village of Manappad, southern Tamil Nadu from eating, on 3rd August, the meat of a sea turtle whose head was described as being somewhat equiline, and as resembling a parrots beak. The sea turtle was also known locally as "Natchely Ammai" which means "turtle with a mouse-like head" and had a yellow plastron whereas that of the sea turtle species that was usually consumed (in all likelihood, the green turtle, (Chelonia mydas) was always white. On this occasion, some of the fishermen's advice against consumption of the meat, on the basis of it being of an occasionally poisonous variety, went unheeded. In 1970, deaths occurred at the village of Periatthalai, 7 miles from Manappad, from the consumption of turtle meat.

In 1972, about 20 persons died in Thezai village from Hawksbill meat poisoning. (Valliappan and Pushparaj, 1973).

Deraniyagala (1953) cites instances of deaths in Sri Lanka in June 1921 at Mandaitivu (24 persons) and on December 3, 1941 at Habaraduva "Its toxicity is thought to be due to the diet of the animal at the time; accordingly fishermen chop its liver and throw it to the crows before cooking its flesh. If the crows refuse it, the animal is discarded. Another test is to mix the raw flesh with slaked lime which turns greenish if the flesh is poisonous".

Valliappan and Pushparaj cite additional tests that some Tuticorin fishermen employ: the turtles blood drips off quickly if the meat is nonpoisonous and thickens on the knife blade if poisonous. A drop of blood on the skin itches and the spot becomes inflamed if the meat is poisonous.

Among symptoms of Hawksbill meat poisoning are:

Neurological symptoms like vertigo, twitching of the muscles leading to convulsions, coma and finally death. Ulceration throughout the buccal cavity, severe itching sensation in and sloughing of the upper layers of the tongue. A sensation of obstruction in the chest, respiratory failure followed by cardiac failure.

In the absence of knowledge of the exact type of poison involved, patients were given high doses of tetracycline, massive doses of vitamin C and corticosteroids and were put on plenty of fluids and diuretics. Where treatment was started before the collapsing stage, cases responded very satisfactorily to the administration of 'Siquil' as an antiemetic, "Anthisan" tablets for food allergy and "Terramycin" injection for the infection. In all cases where death occurred, one to four days elapsed from the time the meat was consumed.

The above data were kindly supplied by Berchmann Moraes and Dr. B.V. Balaji of Manappad, and by Drs. S.C. Thanupillai, G.C.I.M.- and Dr. Ramasubramaniam of Udangudi.

S.B.

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MUGGER (*Crocodylus palustris*) RELEASES IN ANDHRA PRADESH & TAMIL NADU

Andhra Pradesh

On 7th April 1980, the Andhra Pradesh Crocodile Conservation project released 33 mugger crocodiles (11 males and 22 females hatched in June 1977) into the Kinnerasani reservoir situated within the Kinnerasani Wildlife Sanctuary. This sanctuary is located 300 km north-east of Hyderabad. The released crocodiles all ranged from 1 to 1.3m in size. Follow up monitoring survey of the released crocodiles was carried out in August 1980. Some have shown a upstream movement of over 15 km during this monsoon time.

During previous surveys in this reservoir only a few (less than five) resident muggers were reported. No breeding has taken place in past years. Since, the released muggers are all of Gir (Gujarat) origin and are a very slow growing strain (1.2m in three years!) it was decided not to mix them up with the resident Andhra Pradesh wild breeding stock occurring in the Krishna and Godavari rivers and some other tributary rivers. The remaining 58 Gir muggers of 1977 origin are being released in Pakhal Wildlife sanctuary and again in Kinnerasani sanctuary. These releases are planned for the coming winter (November 1980 to February 1981).

Tamil Nadu

The second large scale mugger release by the Tamil Nadu Crocodile Conservation Project was carried out at Hoggenakal in May 1980. (The first release was

in March 1979 when 130 muggers of 1976 and 1977 stock were released into Krishnagiri lake).

On 30th May 1980 a total of 47 mugger all results of wild eggs collected from Cauvery river near Hoggenakal during 1976, 1977 and 1978, were released into the Cauvery river 15 to 20 km upstream of the Hoggenakal Falls. The 47 released crocodiles measured between 1.2 to 1.9 m in size. In this little disturbed area it is hoped that these crocodiles will find a most suitable habitat to live in and multiply.

B.C. Choudhury

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MUGGER BREEDING IN NEHRU ZOOLOGICAL PARK, HYDERABAD

The 1.95m and 2.13m female (approximately 6 to 7 year old) both laid eggs this year (1980) in the temporary mugger pool at Nehru Zoological Park, Hyderabad. This display pool covers an area of 140 Sq. m of which roughly one third area is a water moat of 1 meter depth. In this pool there were five males (ranging from 1.6 to 2.4m in size) and two females. Courtship and mating was observed from September 1979 to February 1980, in which the participants were only the big dominant male and the two females. Other males were chased by the dominant male. As such, fighting incidents were more during the mating season — the peak of which was the last week of December to second week of January. Mating was observed as late as March 1980.

On 8th May 1980 the bigger female (F_1) was seen laying one egg on top of the ground without digging a nest hole. This egg had no shell development. When the smaller female (F_2) had laid her eggs is not known.

On 2nd June 1980 a freshly hatched hatchling was seen in the pool and was removed, with F_2 exhibiting much aggressiveness. F_2 was observed to be protecting one particular area and on the next day she was seen muzzling an area with her snout but was unable to dig the compact black cotton soil. On 5th June she was driven out and the nest was opened. Including the empty egg shell there were 10 eggs in the egg chamber, which consisted of two infertile egg one egg had a live hatchling. Six had embryos of different ages, all dead. The death of these six embryos is attributed to the low nest depth and high nest temperature, being exposed to the sun most of the time. The compact black cotton soil may also be one of the factors responsible. So, the first year of mugger hatching in Nehru Zoo, Hyderabad resulted in 20% success though 80% fertility was seen.

With this NZP joins the list of Mugger breeders in the country, the other institutions being Ahmedabad Zoo, Jaipur Zoo, Baroda Zoo, Madras Crocodile Bank and Snake Park Trust, Delhi Zoo and Vizag Zoo.

A new breeding pool covering an area of 27,000 sq m three separate territorial pools of 1.5m depth and 60% basking land around has been designed and into this pool a total of three males and seven females has been released. It is hoped with separate territorial pools and several females the breeding success may be higher in the future years.

B.C. Choudhury
c/o Nehru Zoological Park
Hyderabad-500 264
A.P.

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Of the Python molurus which hatched on 26th-27th July '80, eight survive and are being reared at the Snake Park. The average measurements on hatching were: snout to vent 49.6 cm; tail 7.5 cm; weight 103.5 gms. Baby mice were offered and eaten on 29 July and they were fed on increasingly bigger mice, every five days. On 3rd November, two were given day-old chicks.

The first sloughing took place within two weeks of hatching. The second sloughing began on 26 September. Of the eight hatchlings 4 are males and 4 females.

Average Growth:

<u>Date</u>	<u>S-V</u>	<u>Tail</u>	<u>Weight</u>
21.8.80	53.7cm	7.7cm	107.9 gm
11.10.80	60.9cm	8.3cm	143 gm
25.11.80	61.4cm	8.7cm	155 gm
10.1.81	66cm	9.0cm	186 gm

Bob Larson and J Vijaya
Madras Snake Park Trust
Guindy Deer Park
Madras 600 022

Of the Iguana iguana which hatched in May '80, twenty-one survive and have had the following growth rates:

<u>Date</u>	<u>Snout</u>	<u>Tail</u>	<u>Weight</u>
30.5.80	6.3 cm	16.8 cm	10 gm
24.7.80	8.2 cm	21.3 cm	18.5 gm
24.8.80	9.9 cm	23.3 cm	26.4 gm
21.10.80	10.2 cm	28.2 cm	43.9 gm
2.2.81	13.1 cm	35.3 cm	78.0 gm

A food intake study done in July 1980 showed that a single juvenile iguana consumed 31.6 gm of vegetable matter a week and 4.5 gm a day.

Bob Larson and J Vijaya
Madras Snake Park Trust
Guindy Deer Park
Madras-600 022

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World Wildlife Fund-India has opened a Data Centre for Natural Resources, at Bangalore. The Centre will collect material about wildlife and habitats, and suitably index them for reference and use by interested persons, with a view to promote conservation, and prevent destruction of habitat through control of environmental pollution. The functions of the Centre will thus be twofold; to collect, and to disseminate information. The Centre will also collect unusual photographs, both black and white and colour, relating to the above topics. Any help would be appreciated; use tear-sheet below to make contact.

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To:

The Administrator, Data Centre for Natural Resources,
c/o Dynacraft Machine Co. Ltd.,
36, 7th Cross (First Floor), Vasanthanagar,
Bangalore 560 052

Dear Sir,

I am actively interested in control of environmental pollution and/or in conservation of plants/animals/birds/insects/fish of common/rare species. I will supply/need information on this subject from time to time, and I will contact you.

Yours faithfully,

Name:

Address:

(Signature)

Place:



SUBSCRIPTION

Local : Rs. 10 annually
Foreign : \$ 2 annually (surface)
 \$ 4 annually (air-mail)

Cheques should be made to the Madras Snake Park Trust



Newsletter of the Madras Snake Park Trust, Guindy Deer Park, Madras-600 022. Edited by Zai Whitater.
Information may be used elsewhere with acknowledgement given to Hamadryad, Madras Snake Park Trust.